

## CLAIMS:

1. A method for driving a liquid crystal cell, comprising the steps of:  
receiving a data source signal from a data source;  
measuring a residual voltage level remaining in this cell from a previous  
frame;  
5 calculating a drive signal as a function of said data source signal and said  
residual voltage level; and  
applying the drive signal to said cell.
2. A liquid crystal display driver circuit, comprising:  
10 sense means for sensing a cell voltage of a liquid crystal cell and providing a  
sense means output signal representing said cell voltage;  
drive voltage generating means for generating a data drive signal on the basis  
of a data source signal, on the one hand, and said sense means output signal, on the other  
hand;  
15 drive signal application means for applying the thus generated data drive  
signal to the liquid crystal cell; and  
a switch controller for controlling the timing of the sense means and the drive  
signal application means.
- 20 3. A liquid crystal display driver circuit according to claim 2, comprising:  
a data signal input for coupling to an output of a data source;  
a gate signal input for coupling to a gate pulse source;  
a circuit output for coupling to a data line of a liquid crystal display;  
the drive voltage generating means having a first input coupled to the data  
25 signal input ;  
said drive signal application means being coupled between an output of the  
drive voltage generating means and said circuit output;  
said sense means being coupled between a second input of said drive voltage  
generating means and said circuit output.

4. A liquid crystal display driver circuit according to claim 3, wherein said sense means comprise a latch having an output coupled to said second input of said drive voltage generating means.

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5. A liquid crystal display driver circuit according to claim 3, wherein said drive signal application means comprise a first controllable switch having a control input coupled to a first output of the switch controller;

wherein said sense means comprise a second controllable switch having a control input coupled to a second output of said controller;

10 wherein said switch controller has an input coupled to the gate signal input.

6. A liquid crystal display driver circuit according to claim 5, wherein said switch controller is adapted, when receiving a gate pulse at its input, to generate at its second output a sense pulse as the second control signal for the second controllable switch, such that the second controllable switch is switched to a conductive state for the duration of said sense pulse, wherein the sense pulse has a predetermined duration which is shorter than the duration of a gate pulse; and

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to generate, after said sense pulse, a drive pulse as the first control signal for the first controllable switch, such that the first controllable switch is switched to a conductive state for the duration of said drive pulse, wherein the duration of said drive pulse substantially corresponds to the duration of the gate pulse minus the predetermined duration.

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7. A liquid crystal display driver circuit according to claim 6, wherein said switch controller comprises:

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a monopulse generator triggerable by leading edges of gate pulses, adapted to generate at a first output output pulses having the predetermined duration, said first output being coupled to said second output of said switch controller;

an AND gate having one input coupled to said input of said switch controller, and having another input coupled to receive inverted output pulses from the monopulse generator, an output of the AND gate being coupled to said first output of said switch controller.

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8. A liquid crystal display driver circuit according to claim 2, wherein the drive voltage generating means comprise:

- a function calculation unit, for receiving the data source signal and the sense means output signal,
- an adder for adding the data source signal to a correction signal, being an output of the function calculation unit; and
- an output of the adder, being the output of the drive voltage generating means.

9. A liquid crystal display, comprising a matrix of pixels arranged in rows and columns, each pixel comprising a liquid crystal cell having one terminal connected to a drain electrode of a driver transistor, a source electrode of the driver transistor being connected to a column data line and a gate electrode of the driver transistor being connected to a row gate line;

each row gate line being coupled to a corresponding output of a gate driver;

each column data line being associated with a liquid crystal display driver circuit according to claim 2, each column data line being coupled to the output of the associated driver circuit, the data input of this associated driver circuit being coupled to a corresponding output of a data driver.

10. An integrated data source, comprising:

- a data source having an output for providing a data source signal; and
- a liquid crystal display driver circuit according to claim 2.